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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/529,849

03/31/2005

Tamio Akada

TAM-052

1565

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KUBOVCIK & KUBOVCIK  
SUITE 710  
900 17TH STREET NW  
WASHINGTON, DC 20006

EXAMINER

GOLOBOY, JAMES C

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

02/15/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/529,849	<b>Applicant(s)</b> AKADA ET AL.	
	<b>Examiner</b> James Goloboy	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/31/05</u>   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-3, 6-7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (JP 11-131083).

An English machine translation of this reference has been used in setting forth this rejection. In structure VII (paragraph 39), Kato discloses a perfluoropolyether terminated on both ends by an amino group having a hydroxyl group, as recited in claim 1. In structure XI (paragraph 50), Kato discloses a similar compound. In both compounds, the amino group having a hydroxyl group has between 1 and 8 carbon atoms, within the range recited in claim 2. In paragraph 32 Kato discloses that the polyethers are incorporated into a lubricious layer on a magnetic recording medium, meeting the limitations of claims 6 and 9. In column 14, Kato discloses that the R

groups attached to the nitrogen can be a hydrogen instead of an alkyl. When one of the ethyl groups in the amino groups of structure XI is replaced by a hydrogen, the perfluoropolyether meets the limitations of claims 3 and 7 where the amino group having a hydroxyl group is ethylethanolamino. The difference between Kato and the currently presented claims is that Kato does not disclose specific amounts of each repeating units of the perfluoropolyether that fall within the ranges recited in claim 1.

The repeating units in the perfluoropolyethers of Kato are the same as those recited in claim 1, and in paragraph 23 Kato discloses that the composition preferably has between 6 and 60 repeating units, with a molecular weight of 500 to 10,000. In paragraph 26 Kato teaches that the ratio of the two types of repeating unit is suitably between 0.8 and 1.2. The ranges of m and n in the polyethers of Kato will therefore strongly overlap the ranges for m and n recited in claim 1. See MPEP 2144.05(I): "In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976);" The perfluoropolyethers of Kato therefore render claims 1-3, 6-7, and 9 obvious.

4. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tei (U.S. Pat. No. U.S. Pat. No. 6,096,694) in view of Kato.

In column 3 lines 58-60, Tei discloses a perfluoropolyether lubricant to be applied to a magnetic recording medium. In column 4 lines 10-20, Tei discloses that the perfluoropolyether can have a structure containing the same repeat units as structure I

of claims 1, 6, and 9, and that at least one end group is an amine functional group. In column 4 lines 58-62 Tei discloses that the amine can be an aliphatic amine, and in column 7 lines 48-52 and column 10 lines 21-57 Tei discloses that the amine group can be a diethylamino group, meeting the limitations of the non-hydroxyl containing B group recited in claims 1, 4-6, and 8-9. The differences between Tei and the currently presented claims are:

i) While the perfluoropolyether of Tei contains the same repeat units as the perfluoropolyethers of claims 1, 6, and 9, Tei does not disclose the specific number of repeat units in the polymer.

ii) While Tei discloses that both end groups can be amine groups, Tei does not disclose an amine group containing a hydroxyl group.

With respect to i), Tei discloses in column 8 lines 10-13 that the perfluoropolyether preferably has a molecular weight from 1500 to 5500. As the repeat units have molecular weights of about 116 and 66, the possible ranges of m and n in the perfluoropolyether of Tei that will yield a polymer with a molecular weight within the preferred range overlaps the ranges recited in claim 1.

With respect to ii), the discussion of Kato in paragraph 3 above is incorporated here by reference. Kato discloses a perfluoropolyether lubricant for magnetic recording media comprising amine end groups that contain a hydroxyl group. When both end groups of Tei are amine groups, and one is a diethylamino group as discussed above, the use of the hydroxyl-containing end group of Kato as the other end group forms a perfluoropolyether meeting the limitations of claims 1-9.

It would have been obvious to one of ordinary skill in the art to use the hydroxyl-containing amine end group of Kato as one of the end groups in the perfluoropolyether of Tei, as Kato teaches that perfluoropolyethers containing such an end group are superior lubricants for magnetic recording media.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Goloboy whose telephone number is (571)272-2476. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCG

/Glenn A Caldarola/  
Acting SPE of Art Unit 1797

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